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(PFB/FOD)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JUL 26 1990

MEMORANDUM

OFFICE OF
PESTICIDES AND TOXIC SUBSTANCES

SUBJECT: AZ900006. 24(c) Registration. Chlorpyrifos (Lorsban® 4E
EPA Reg. No. 464-448) on Asparagus in Arizona
DEB # 6837

FROM: Jane S. Smith, Chemist *JSS*
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Dietary Exposure Branch
Hazard Evaluation Division (H-7505C)

THRU: Andrew R. Rathman, Section Head
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Hazard Evaluation Division *ARR* (H-7505C)

TO: D. Edwards / J. Andreasen PM Team 12
Rodenticide-Insecticide Branch
Registration Division (H7509C)

DowElanco is requesting a Special Local Needs 24(c) registration for the use of Lorsban® 4E (containing chlorpyrifos EPA Reg. No. 464-448) on asparagus in the state of Arizona to control armyworms, asparagus aphids, and grasshoppers.

Tolerances are established (40 CFR 180.342) for combined residues of the pesticide chlorpyrifos (0,0-diethyl 0-(3,5,6-trichloro-2-pyridyl) phosphorothioate and its metabolite 3,5,6-trichloro-2-pyridinol in/on a wide variety of RACs ranging from 0.05 to 15 ppm. Regional tolerances have been established for residues of chlorpyrifos in/on asparagus at 5 ppm in the states of Iowa, Illinois, Indiana, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, Oregon, South Dakota, and Washington.

The Second Round Review (SRR) of the Product/Residue Chemistry Chapter of the Registration Standard was issued 10/14/88.

In the pacific northwest and midwest Lorsban® is applied at the rate of 2 pints/acre (0.5 lbs a.i./acre) by foliar spray application. Only one preharvest application and 2 postharvest applications (during fern stage) are permitted per season.

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Proposed Use

Lorsban® is proposed for use primarily in western AZ for application at the rate of 1 quart/acre (1 lb a.i./acre). Ground spray applications would involve dilution with 20 gallons of water and aerial applications would require 5 gallons of water for dilution before application. Only one preharvest application and two postharvest applications during fern stage would be permitted. The preharvest interval is 1 day. Use of this product in irrigation systems is not permitted.

Nature of the Residue

According to the SRR the qualitative nature of the residues of chlorpyrifos in plants and animals is adequately understood and the residues of concern are chlorpyrifos and its metabolite 3,5,6-trichloro-2-pyridinol. However, in a recent addendum to the residue chemistry chapter of the SRR (memo, 1/13/89 from D. Edwards [DEB] to C. Kent [RD]), it was determined that TCP should be dropped from the tolerance expression.

Analytical Method

Adequate methods are available for data collection and enforcement of tolerances for residues in plant and animal commodities, according to the SRR. The methods used to determine chlorpyrifos in plants are published in PAM Vol. II as methods I, II, and VI. The methods for determining residues of TCP in plants are published in PAM Vol. II method VII. The limits of detection are 0.01 ppm for chlorpyrifos in plants and 0.05 ppm for TCP in plants.

Residue Data

Residue data from field trials conducted in the Imperial Valley of California were submitted with this request. These trials conducted in the south eastern most corner of California involved four foliar applications (three at fern stage plus one to the spears) of chlorpyrifos at 1 lb a.i./acre of asparagus and a 1 day PHI. Chlorpyrifos residues were 0.98 ppm, 1.22 ppm, 1.51 ppm, and 0.99 ppm. The corresponding TCP residues were 0.67 ppm, 0.68 ppm, 0.84 ppm, and 0.44 ppm.

The trial samples and fortified samples were stored frozen approximately 7 months. The samples fortified at 0.1 ppm, 0.02 ppm, and 0.05 ppm had recoveries of parent compound of 95.0%, 90.0%, and 91.6%, respectively. Recoveries of TCP (fortified at the same levels) were 92.8%, 97.8%, and 85.6%, respectively.

Although the field trials were conducted in California, the proximity to western Arizona is such that this data is acceptable for an Arizona regional use tolerance. Based on the residue data submitted and the proposed use it is unlikely that the combined residues of chlorpyrifos and TCP will exceed 5 ppm in/on asparagus.

Conclusions and Recommendations

DEB concludes that the residues of chlorpyrifos plus TCP are not likely to exceed the established regional tolerance of 5 ppm in/on asparagus as a result of the proposed use.

cc: RF, Circu, 24(c) file, Reg. Std file, Subject file, Reviewer, RDSchmitt, PMSD/ISB (C. Furlow).

RDI: ARRathman, 07/26/90; EZager, 07/26/90.

H-7509C: DEB:JSS:jss(24(c).clpyrfs):CM#2:Rm810F:7/26/90.